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ABSTRACT

The Strands Walk is a simple field trip activity designed to acquaint students with an unfamiliar area and with each other. The teacher's role in this activity is to help the students express what they observe, experience, and question. Methods of study and concepts for emphasis are included in this publication. A major portion of the booklet is devoted to the student task forms. Each task is based on one of the Strands concepts of the National Park Service's Environmental Education Program: variety and similarity; patterns; interaction and interdependence; continuity and change; and evolution and adaptation. Three additional tasks concern problem focus. In a final section to the teacher, there are behavior objectives associated with the activity and an illustration of the data-theory cycle. (MA)

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PRICE:

the strands walk

- a simple activity by which you and your class can take that first strangeness from the place you are visiting together--and get to know each other better, too.

On the Strands Walk, your principal role as a teacher will be to help your children express what they observe and experience, to form or put words to those questions on their minds. And, of course, to help them with the processes of answering them.

It could, it should, lead to bigger and deeper understandings of many specific ideas, observations, and concepts of the environment. But these will be based on the questions you discover together--not on a prepared agenda. Thus, if any of the following questions or ideas are at first unclear, consider part of the exercise to decide on their meaning to you.

A. The Plan -

1. Walk or ride somewhere. (We suggest an Environmental Study Area, but most any place will do.)
2. Jot down a few observations about where you are--what things you see (feel, smell, sense, taste, hear) in this environment. Keep them simple; make your observations fairly quickly. Criteria - if you wish - can be "first things seen," "most important," on that order--simple.
3. Compare notes. This can be as individuals or in small groups. (Small teams might work on a group list of representative observations--based on their own criteria, of course.) Again, a blackboard or chart board for people to post their "findings" is very helpful--but a small group can have a fine rap session just sitting on the grass.

As you compare your observations, try the following:

I. Discuss the varieties and similarities of things "seen."

The point here is twofold: 1. That any environment is made up of a great many elements--many of which go unnoticed; and 2. so are each and every one of us. You might ask here why you each observed the things you did. (No wrong reasons allowed, please!)

II. Try to "group and classify" these observations; see if you can find a pattern. Have each person or team invent a set of categories (Good-Bad, Little-Big, etc.) for what everyone has seen. Or, they might try ranking the same items in some sequence or order (in order of "importance," in order of "beauty").

The point here is that everything falls into some sort of Pattern of existence--if only as we see it--but possibly too along certain lines or following laws or principles much greater than man. We can only discover them and attempt to name them.

Science and taxonomy are devoted to discovery and understanding of these patterns. So is history, art, religion, or for that matter almost any subject you can think of.

There is also a pattern in the way we see things. For example, how many of the things your students saw were what they thought you wanted them to see--they were supposed to see--compared to what they really did see. (This is one category which you should always consider. It has grave implications.)

III. Interrelate as many of the elements observed as you can. This can be tricky. All of you have been "interrelating" with everything you have seen thus far, right? You might start with that observation. Try these--"pick out one thing that depends on, helps, hurts, or cooperates with something else;" or "link as many things together as you can, for whatever reason you can."

Clue - look for food chains, historical sequences, action and interaction.

This can be aided by writing the observations on small cards, with key verbs such as those above and spreading them on a table; or by constructing a wall chart or checkerboard, writing the same things down and then across like on a milage table between cities (see "Task Cards"). Then pose the question "What do items 1-3; 4-2; and so forth have in common? or, have to do with each other?" Make up stories.

The point here is that everything in our environment is interrelated in at least one way, however insignificant it may seem. As individuals we in turn are interrelated in at least two ways. 1. as elements of our environment; and 2. because we consciously and deliberately can and do have a powerful effect on it.

This latter way can bring rewards--or, almost overwhelming problems.

IV. Enough of the present, now the past. What was here yesterday? last year? a century or perhaps one million years ago? (Any length of time will do. If they are 6th grade you might say "12 years ago" and see if they discover themselves!) Or, what clues do we have in our observations as to where this "environment" came from and what has come before?

Thus the fourth concept is one of time, of change and continuity. The temporary nature of some things versus the eternal (seeming) nature of others.

Did you know that each atom of your body is replaced every 6 weeks--including your teeth? Where do they go?

V. But what about the future? Are there clues to that here, too? What will be here tomorrow? next year? one thousand years or more? You? Find something for each and "prove it."

Of those elements that exist right now some are new, some are old and some are eternal--but all have one quality in common: they are adapted to Today, if only for an instant.

Many others have become extinct--dinosaurs (most), sailing ships (most), Dodo birds, and the Roman Empire.

They adapted--by becoming something new. This is called evolution.

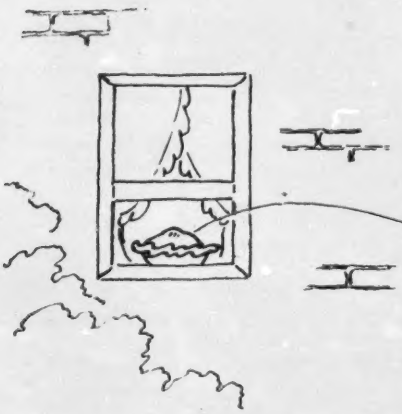
What were the things you observed before they were what they are today? And what will they be tomorrow???

Will monkeys be people will people be fish will cars become buses will trees become forests will towns become cities will oceans be sewers will man become extinct?

Perhaps you didn't see all these things on your walk; but perhaps you're thinking about them now--a little.

Where do we go from here?

TASK I VARIETY AND SIMILARITY



a. SELECT 5 THINGS FROM OR IMPRESSIONS YOU'LL HAVE OF THE ENVIRONMENT AROUND YOU AND LIST BELOW.....

1.

2.

3.

4.

5.

b. MAKE A GROUP LIST WITH YOUR TEAM. USE ANY CRITERIA YOU WISH... COMMON IDEAS, MOST IMPORTANT, FIRST, ETC.

1.

2.

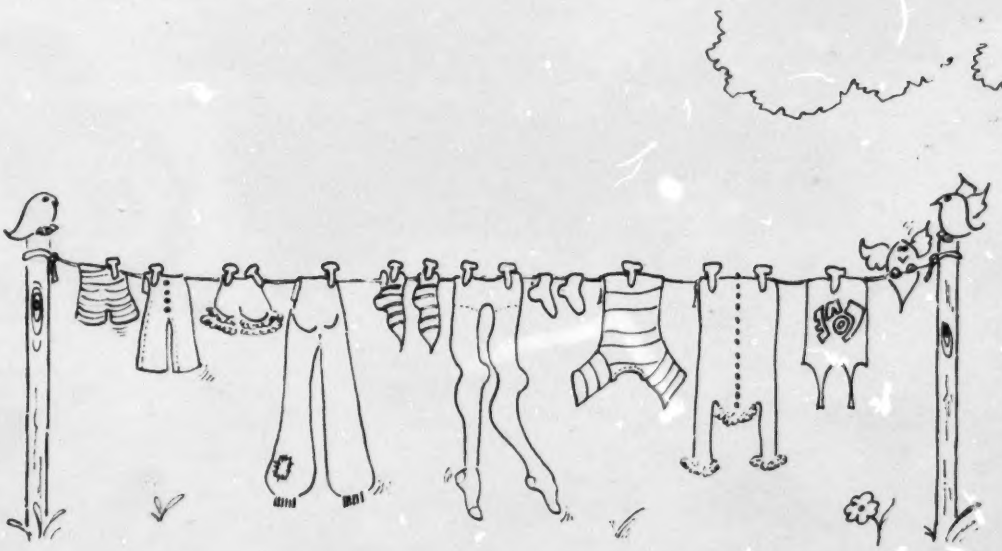
3.

4.

5.

TASK II

PATTERNS



2. INVENT 3 WAYS OF GROUPING AND CLASSIFYING WHAT YOU HAVE LISTED

1.

2.

3.

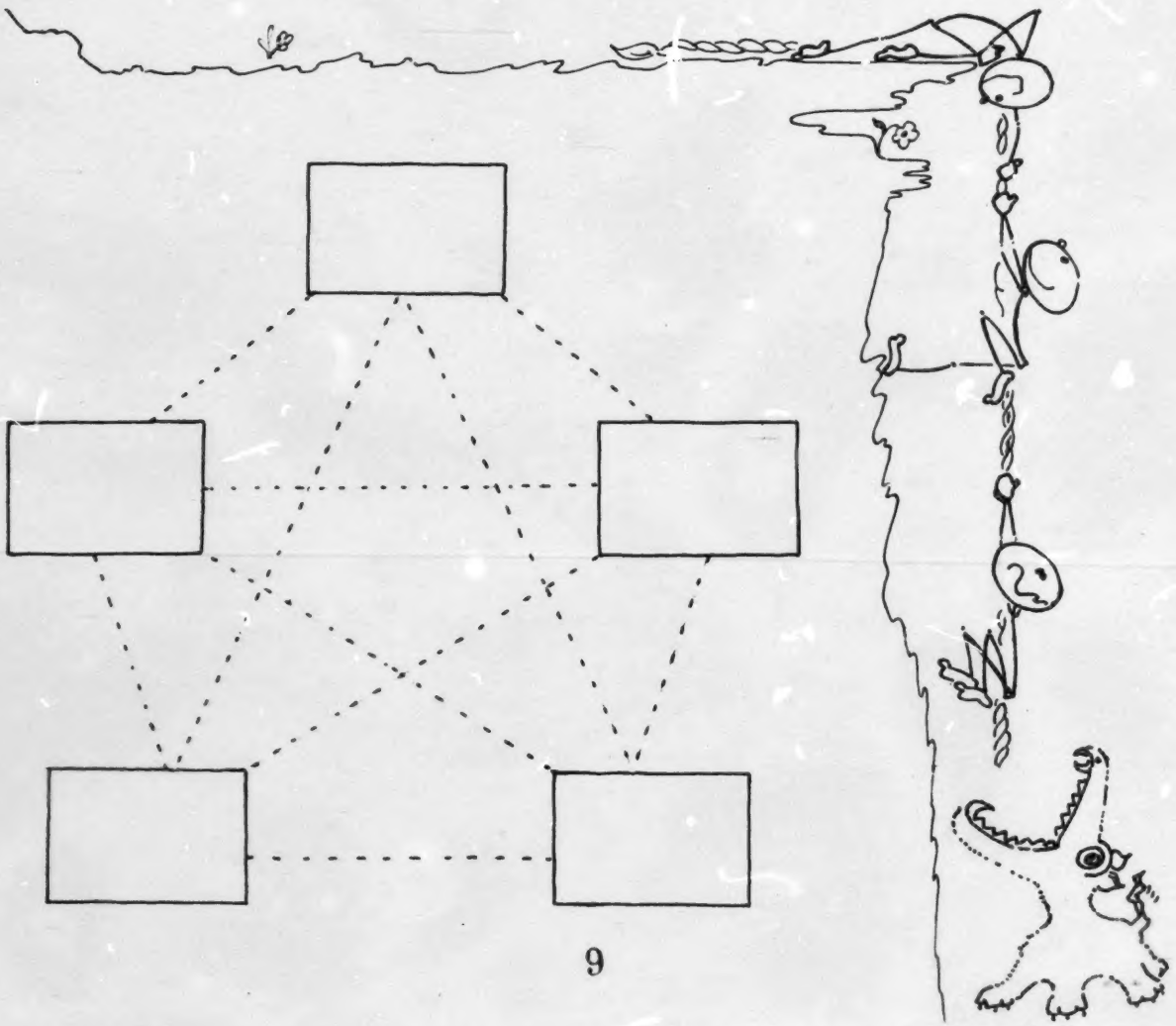
b. TEST THESE BY CLASSIFYING EACH ITEM. DO ALL THINGS FIT? NOTE YOUR CONCLUSIONS HERE.

TASK III INTERACTION AND INTERDEPENDENCE

a. WRITE YOUR 5 OBSERVATIONS IN THE BOXES BELOW.

b. NOW SEE HOW MANY YOU CAN CONNECT THAT ACT ON, NEED, OR ARE RELATED TO EACH OTHER. TELL HOW.

c. ARE ANY THE RESULT OF OTHER "INTERRELATIONSHIPS"?



TASK IV

CONTINUITY AND CHANGE

a. HOW MANY OF YOUR OBSERVATIONS TODAY ARE EXAMPLES OF CHANGE OR ARE CLUES TO THE PAST?

1.

2.

3.

4.

5.

WHY ARE THEY HERE TODAY?

b. THINK OF 5 THINGS THAT AREN'T HERE TODAY BUT WERE SOMETIME BEFORE.

1.

2.

3.

4.

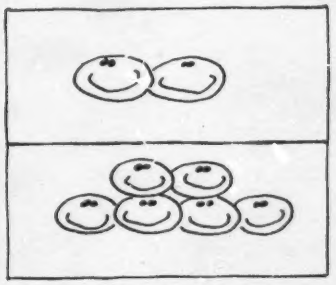
5.

WHY AREN'T THEY HERE TODAY?

TASK V EVOLUTION AND ADAPTATION

a. HOW MANY OF YOUR OBSERVATIONS TODAY SHOW "ADAPTATION"? ("WHY ARE THEY HERE TODAY?)

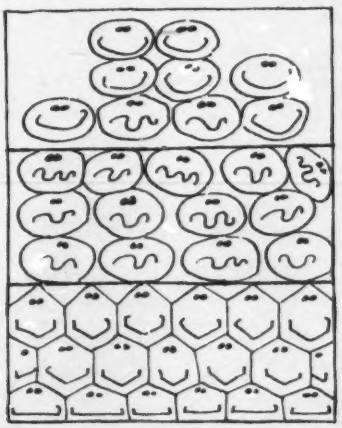
1.
2.
3.
4.
5.



WHICH OF THESE WILL BE HERE TOMORROW? WHY?

b. THINK OF 5 THINGS THAT AREN'T HERE TODAY BUT MIGHT BE HERE TOMORROW OR SOMETIME IN THE FUTURE.

1.
2.
3.
4.
5.



WHEN WILL THEY BE?
WHY WILL THEY BE?

c. DO YOU WANT THEM TO BE?

TASK VI PROBLEM FOCUS

a. WRITE OUT 1 OR 2 QUESTIONS YOU'LL NOW HAVE ABOUT THIS ENVIRONMENT OR ONES YOU'LL THINK SOMEONE ELSE MIGHT ASK.

1.

2.

b. COMPARE THESE WITH OTHERS OF YOUR GROUP FOR VARIETY AND SIMILARITY. CAN YOU'LL COMBINE ANY? DO SO AND RECORD BELOW.

1.

2.

3.

4.

5.

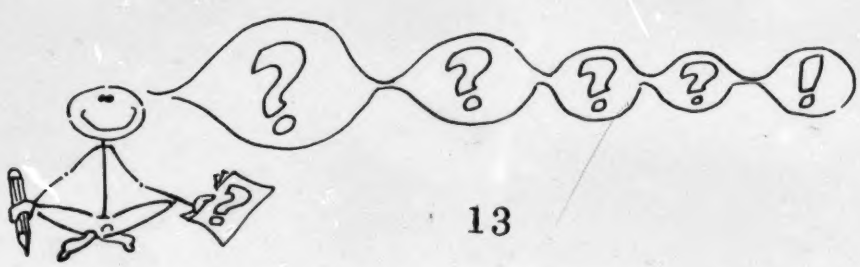
TASK VII

PROBLEM FOCUS

a. WHAT KINDS OF QUESTIONS DO YOU HAVE? DO THEY FALL INTO ANY PATTERNS? NATURAL HISTORY, CULTURAL, ANIMAL, PLANT, PHILOSOPHICAL OR WHATEVER... WHAT ARE THE QUESTIONS ASKING ABOUT?

b. TRY THE SAME QUESTION ANOTHER WAY-- HOW ARE THEY ASKING? WHAT FOR? ARE THEY SIMPLE DATA QUESTIONS, INFORMATION, PERMISSION; OR ARE THEY ASKING FOR CLARIFICATION OR DEEPER UNDERSTANDING? ANYTHING ELSE THEY MIGHT BE ASKING? (HIDDEN QUESTIONS)

c. DESCRIBE BRIEFLY THE WAYS YOU MIGHT ANSWER THE ABOVE.



TASK VIII PROBLEM FOCUS

a. SELECT ONE QUESTION.

b. WRITE OUT AS MANY POSSIBLE EXPLANATIONS OR ANSWERS YOU MIGHT HAVE FOR IT NOW.

1.
2.
3.
4.

c. TAKE EACH ONE AT A TIME AND DESIGN A MEANS OF ANSWERING OR TESTING IT.

1.
2.
3.
4.

EQUIPMENT NEEDED:

POSSIBLE DATA SOURCES:

d. FOLLOW IT OUT AND REPORT BACK IN _____ HOURS.

B. The Point of It All

Some of you might think of the following as "behavioral objectives" or goals. Perhaps we should say they are just our reasons for following the steps as outlined in the "Strands Walk."

One--confidence or trust-building . . . very simply, to convey to children that here at least they are entitled to their own impressions, their own values and conclusions. First impressions--upon which the walk is largely based--are rarely random: they express a great deal of the person making them. And this is usually nice to share--so getting to know each other is a goal here, too.

Again, too much of field study--especially in a new and strange setting which is threatening by itself--denies the individual his or her own feelings. This is usually justified in some abstract statement about the quest for "truth" or scientific objectivity.

Two--understanding the group . . . or, to find out where they are, how much they know or are able to feel, and what each has to offer. And of course, to give them a chance to offer it.

Three--to express the "Strands" concepts of the National Park Service's environmental education program through experience, participation and recognition. These are:

"Variety and Similarity. Many likenesses and differences occur among living and nonliving things. A variety of functions, sizes, and structures exist in plants and stars, rocks and animals, processes and people. Yet sufficient similarities permit their classification into orderly patterns." Action: listing, observing.

"Patterns. Organizational patterns may be found in rock formations as well as social groups of people and animals. Functional patterns include traffic movements, classroom schedules and taxonomies. Spatial arrangements are patterns that often please us. Such patterns occur both in nature and by man's design." Action: grouping and classifying.

"Interaction and Interdependence. Nothing exists in isolation. Each of us constantly interacts with living and nonliving things: our family, our belongings, our friends, our world. These in turn depend on us to function. The process is continuous even after death, for dead forms nourish the living." Action: comparing, interrelating and interrelating with.

"Continuity and Change. Both living and nonliving things constantly change--whether among galaxies and planets or within body cells and systems. Yet some things remain the same in spite of change. For example matter and energy may change in form, but they can never be created or destroyed." Action: deducing the past: sequencing events, ideas.

"Evolution and Adaptation. Systems, cultures, living and nonliving things over centuries and centuries of time alter and develop in the process called evolution. Those features which adapt them best to a changing environment are passed on from generation to generation thus ensuring their survival--not all do." Action: predicting the future; sequencing events, ideas.

Four--identifying "problem focuses" . . . to not leave this introductory visit hanging we try to bring forth questions that can be examined in depth through the "data-theory cycle." Or, observing; forming hypotheses; testing hypotheses through further observation, experimentation or research; and becoming confident enough to formulate some theories or "answers" about or to our own experience. Learning how to state a question and seek an answer.

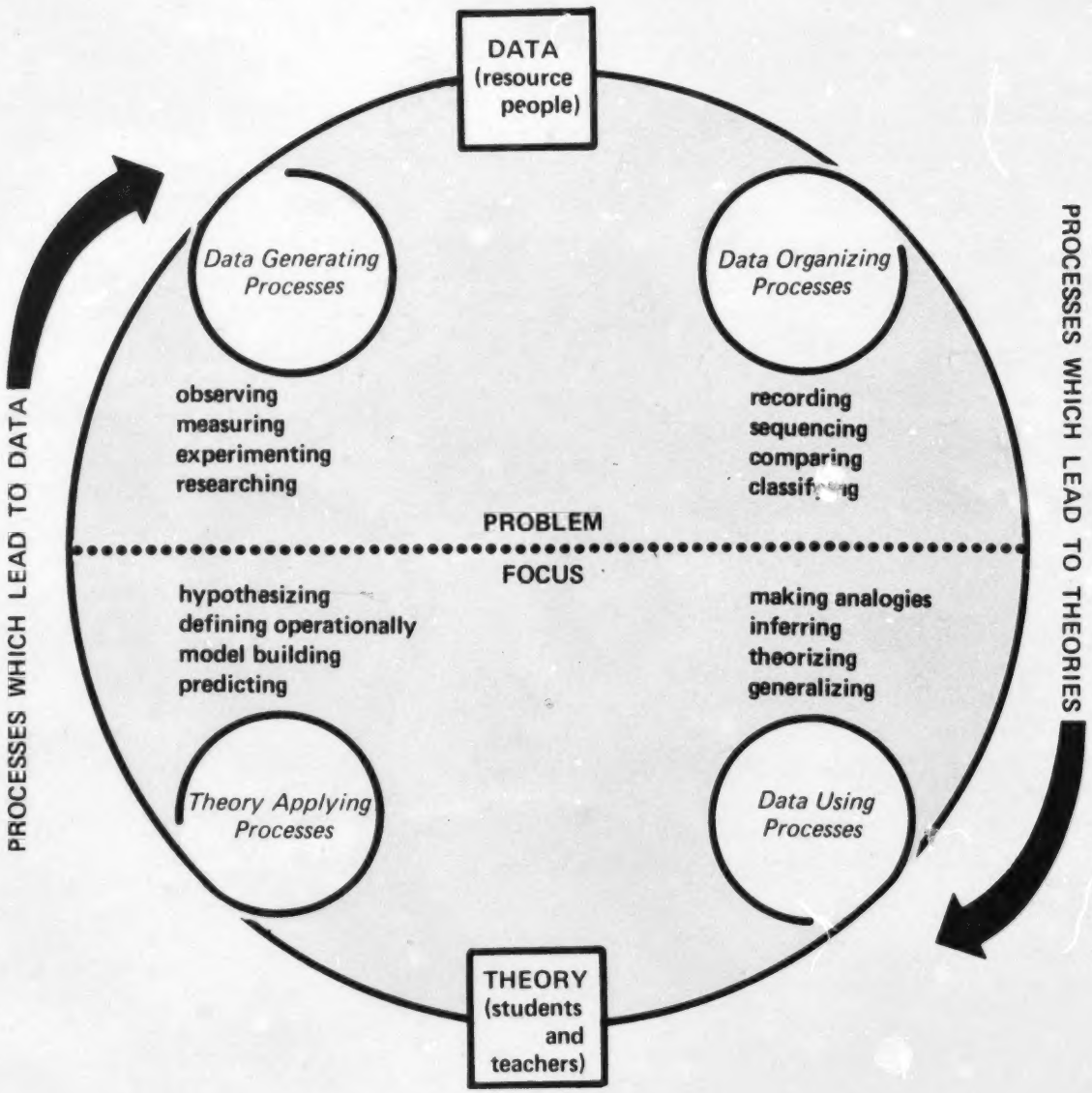
Five--to seek a concept of our oneness with our environment--not of ourselves as separate and distinct. Which is to say we are ultimately looking at our own nature, our own behavior as a product of nature--with all our cultural artifacts that we in turn have contrived from nature and are therefore no more than an extension of it. And, what we have done to and how we are caring for what remains of it.

This final goal really goes back to item one: to let children develop their own interpretations--and if these must be challenged let them be the ones to challenge them. We guide.

One thing stands out that is curiously different in the way children perceive: while adults will invariably "group and classify" man-made elements of the environment against those which are natural, children never do.

We hope the "Strands Walk" will let you discover a little more how you perceive, too. We hope in part it will be through the eyes of others.

DATA – THEORY CYCLE



* adapted from Strategies of Science Instruction. Costa, Strasser, and Lowery. 1972